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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/759,257	01/16/2001	Toshiyuki Sano	0402/00620	9488

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EXAMINER

LONG, HEATHER R

ART UNIT

PAPER NUMBER

2615

DATE MAILED: 04/21/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

2

Office Action Summary

Application No.

09/759,257

Applicant(s)

SANO ET AL.

Examiner

Heather R Long

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 4 and 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al. (U.S. Patent 6,204,881) and further in view of Kawai et al. (U.S. Patent 6,141,047).

Regarding claim 1, Ikeda et al. discloses a solid state imaging apparatus comprising: an image pickup means (401) for alternately outputting two kinds of

video signals within a period of field, the two kinds of video signals being a long-term exposure signal having a long exposure time and a short-term exposure signal having a short exposure time, and a mixing means (405) for mixing the long-term exposure signal and the short-term exposure signal at a predetermined brightness level, wherein a setting means is provided for independently setting a gain and a knee point for each of the long-term exposure signal and the short-term exposure signal (Figs. 23, 24, and 33; col. 20, lines 17-40; col. 26; lines 48-65; col. 27, lines 24-27; col. 28, lines 6-8 and 11-19). However, Ikeda et al. fails to explicitly state that the knee point is independently set for the long-term and short-term exposure signals.

Referring to the Kawai et al. reference, Kawai et al. discloses a solid state imaging apparatus comprising a setting means is independently setting a gain and a knee point for each of the long-term exposure signal and the short-term exposure signal (Fig. 2; col. 4, lines 50-62; col. 7, lines 5-15). Fig. 2B also proves that the luminance value and the knee characteristic correspond to one another.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Kawai et al. and Ikeda et al. in order to set the gain and knee points independently because if the gain can be set independently for the long-term and short-term exposures then the knee point would also be able to be set independently since the knee point corresponds to the luminance as well as the gain.

Regarding claim 2, Ikeda et al. discloses a solid state imaging apparatus, wherein the setting means for independently setting the gain and the knee point for each of the long-term exposure signal and the short-term exposure signal comprises: a long-term/short-term discrimination pulse generator which generates a signal discriminating between a period for the long-term exposure signal and a period for the short-term exposure signal; a gain setting means for setting the gain; and a knee point setting means for setting a knee point, wherein a set value for the gain of the gain setting means and a set value for the knee point of the knee point setting means are respectively selected based on the discrimination signal generated from the long-term/short-term discrimination pulse generator, thereby independently setting the gain and the knee point for each of the long-term exposure signal and the short-term exposure signal (col. 26; lines 61-65; col. 17; lines 14-18; col. 27, lines 24-27; col. 28, lines 6-8 and 11-19; col. 17; lines 29-39).

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al. in view of Kawai et al. as applied to claim 1 above, and further in view of Kamishima et al. (U.S. Patent Application Publication 2001/0001245).

Regarding claim 3, Ikeda et al. in view of Kawai et al. discloses a solid state imaging apparatus, further comprising a microcomputer (12) for performing an algorithm that is used to calculate the gain and the knee point based on the evaluation circuit (10) (Kawai et al.: col. 3, line 63 – col. 4, line 1). However,

Ikeda et al. and Kawai et al. fail to disclose detecting an average brightness value of the short-term exposure signal.

Referring to the Kamishima et al. reference, Kamishima et al. discloses a solid state imaging apparatus, further comprising: a means for detecting an maximum-value of the short-term exposure signal (Fig. 7; paragraph [0054]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used only the short-term exposure signal instead of the whole signal to evaluate to result in a shorter calculation period. It also would have been obvious to use the average value as compared to the maximum value as disclosed by Kamishima et al. because Kawai et al. discloses that the evaluation means may use either the peak value, central value, max-min data, average value, and the like to perform the calculations (col. 6, lines 15-26).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
 - a. Ota (U.S. Patent 5,194,960) discloses an image sensing apparatus, wherein the knee-point characteristic is given by the knee-point-driving of image sensors or by knee-point processing of the output signal of image sensors so that the gain of the low luminance portion can be raised and that of the high luminance portion can be compressed.

b. Morimura (U.S. Patent 5,455,621) discloses an image sensing apparatus that reads a charge stored in the imaging element in a first period of the field as a first signal; reads a charge stored in the imaging element in a second period of the field as a second signal, the second period being different from the first period; applying a first weight to the first signal in accordance with the level of the first signal; applying a second weight in accordance with the level of the second signal; producing a synthesized signal by synthesizing the weighted first signal and the weighted second signal; and compressing the level of the synthesized signal to a predetermined standard level.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heather R Long whose telephone number is 703-305-0681. The examiner can normally be reached on Mon. - Thurs.: 7:00 am - 4:30 pm, and every other Fri.: 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HRL
April 16, 2004



NGOC-YEN VU
PRIMARY EXAMINER